WHAT IS CLAIMED IS:

1. A label switching router having an internal channel share function over an asynchronous transfer mode, comprising:

an ingress forwarding engine adapted to set up a label switched path by using a signaling protocol, extract an egress forwarding engine number and an internal channel identifier, allocate an extension tag, search a previously-set internal channel, form a forwarding information base/label information base comprising the previously-set internal channel identifier and the extension tag, add a header having the internal channel identifier and extension tag to a received internet protocol packet by referring to the forwarding information base/label information base, and forward the internet protocol packet; and

a merging unit adapted to receive label switched path set information from a peer forwarding engine, form an extension information base/merging table where an internal channel identifier is mapped to an extension tag, perform merging when receiving an internet protocol packet having the extension tag, extract the extension tag, mapping the extension tag to the internal channel identifier, and forward the internet protocol packet to an internal channel having the mapped internal channel identifier.

2. The label switching router of claim 1, the forwarding engine being controlled by a main control unit, the main control unit being programmed and configured to set up the label switched path by using the signaling protocol, extract the egress forwarding engine number and the internal

channel identifier stored in the forwarding information base/label information base, allocate the extension tag according to the set label switched path, and store the internal channel identifier and the allocated extension tag in the forwarding information base/label information base, wherein the forwarding engine comprises:

the forwarding information base/label information base for storing and managing a destination internet protocol address, the internal channel identifier, the extension tag and a label;

an SAR receiving unit for reassembling the received internet protocol packet, and outputting the reassembled internet protocol packet;

a lookup control unit for adding the header having the internal channel identifier, the extension tag and the label to the internet protocol packet by referring to the forwarding information base/label information base, and outputting the internet protocol packet; and

an SAR transmitting unit receiving the internet protocol packet having the internal channel identifier and the extension tag from the lookup control unit, confirming the internal channel identifier, and forwarding the internet protocol packet to the internal channel identifier.

3. The label switching router of claim 1, the merging unit being controlled by a main control unit, the main control unit being programmed and configured to receive the label switched path set information from the peer forwarding engine, and form the extension information base/merging table where the internal channel identifier is mapped to the extension tag, wherein the merging unit comprises:

an extension information base/merging table mapping the internal channel identifier to the

extension tag, and storing the mapped internal channel identifier;

an SAR receiving unit reassembling the received IP packet, and outputting the reassembled internet protocol packet;

a lookup control unit programmed and configured to add the header having the internal channel identifier mapped to the extension tag to the internet protocol packet by referring to the forwarding information base/label information base, and output the internet protocol packet; and

an SAR transmitting unit confirming the internal channel identifier in the lookup control unit, and forwarding the internet protocol packet to the internal channel identifier.

4. The router of claim 1, the extension tag being indicative of a destination IP address from the merging unit.

5. The router of claim 1, wherein packets originating from different sources and going to a common destination handled by the router are transferred to said common destination via a single channel.

6. The router of claim 5, said single channel is shared by packets from different sources to transmit packets to said common destination.

7. The router of claim 5, wherein only one internal channel is used to deliver packets to a given destination handled by said router.

8. The router of claim 1, where only one internal channel is used to handle all packets of said router having a common extension tag.

9. A method for sharing an internal channel by using a label switching router over an asynchronous transfer mode, the method comprising:

setting up a label switched path by using a signaling protocol, extracting an egress forwarding engine number and a channel identifier, allocating an extension tag, and forming a forwarding information base/label information base by using a previously-set internal channel by an ingress forwarding engine;

adding a header having the internal channel identifier and extension tag to a received internet protocol packet by referring to the forwarding information base/label information base, and forwarding the internet protocol packet by the forwarding engine;

receiving label switched path set information from a peer forwarding engine, and forming an extension information base/merging table where an internal channel identifier is mapped in an extension tag at a merging unit; and

forwarding a received internet protocol packet having the extension tag to an internal channel having the internal channel identifier mapped to the extension tag by referring to the extension information base/merging table at the merging unit.

10. The method of claim 9, wherein the setting up a label switched path by using a signaling

protocol, extracting an egress forwarding engine number and a channel identifier, allocating an extension tag, and forming a forwarding information base/label information base by using a previously-set internal channel by an ingress forwarding engine step comprises:

setting up the label switched path by using the signaling protocol;

extracting the egress forwarding engine number and the channel identifier, and allocating the extension tag; and

searching the previously-set internal channel, and forming the forwarding information base/label information base having the previously-set internal channel identifier and the extension tag.

11. The method of claim 9, wherein the adding a header having the internal channel identifier and extension tag to a received internet protocol packet by referring to the forwarding information base/label information base, and forwarding the internet protocol packet by the forwarding engine step comprises:

reassembling the received IP packet, and outputting the reassembled internet protocol packet;

adding the header having the internal channel identifier, the extension tag and the label to the internet protocol packet by referring to the forwarding information base/label information base ; and

confirming the internal channel identifier, and forwarding the internet protocol packet to the internal channel identifier.

12. The method of claim 9, wherein the forwarding a received internet protocol packet

having the extension tag to an internal channel having the internal channel identifier mapped to the extension tag by referring to the extension information base/merging table at the merging unit step comprises:

performing merging when an internet protocol packet having the extension tag is received;

extracting the extension tag, and mapping it to the internal channel; and

forwarding the internet protocol packet to the internal channel having the mapped internal channel identifier.

13. The method of claim 9, the extension tag being indicative of the internal channel the internet protocol packet is forwarded to from the merging unit.

14. The method of claim 9, only one internal channel is used to deliver all packets to a common destination.

15. The method of claim 9, only one internal channel is set up to deliver packets having a common extension tag.

16. The method of claim 9, only one channel is used to deliver packets to a single destination even when the packets originate from diverse forwarding engines in the label switching router.

17. The method of claim 9, only one internal channel is set up and serves as an only path to

deliver packets from a plurality of forwarding engines in the label switching router to a single destination in the label switching router.